Amendment to the Claims

Please amend Claims 55 and 74 and cancel Claims 1, 45, 48-54, 79-81, 90-96, and 99-100 as follows:

1. (Canceled)

2. (Previously Presented) A physiological training and evaluation simulator suitable for training and testing personnel, comprising:

(a) a simulated physiological structure; and

(b) an evaluation circuit including a conductive elastomer, the conductive elastomer enhancing the realism of the simulated physiological structure, the conductive elastomer exhibiting a self-healing ability with respect to punctures not exhibited by conductive elastomers based on a metal foil combined with an elastomer, the conductive elastomer being configured as a portion of the simulated physiological structure, said evaluation circuit being configured to provide an electrical signal relating to a simulated procedure being performed on the simulated physiological structure, the electrical signal originating from the portion of the simulated physiological structure including the conductive elastomer without requiring:

(i) an electrical current to be provided by an instrument placed in contact with the evaluation circuit during the simulated procedure; or

(ii) the use of an electrically conductive instrument to electrically couple portions of the evaluation circuit together.

3. (Canceled)

4. (Previously Presented) The physiological training and evaluation simulator of Claim 2, wherein the conductive elastomer comprises a conductive carbon dispersed in an elastomeric matrix.

5. (Previously Presented) The physiological training and evaluation simulator of Claim 2, wherein the conductive elastomer comprises a metallic powder dispersed in an elastomeric matrix.

6. (Previously Presented) The physiological training and evaluation simulator of Claim 2, wherein the evaluation circuit comprises a capacitance based sensor, and the signal corresponds to a magnitude of the applied pressure.

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7. (Previously Presented) The physiological training and evaluation simulator of Claim 2, wherein the evaluation circuit is configured to provide the signal when said portion of the simulated physiological structure including the conductive elastomer is touched by a user of the physiological training and evaluation simulator.

8. (Original) The physiological training and evaluation simulator of Claim 7, wherein the evaluation circuit comprises a capacitance sensitive switch.

9. (Previously Presented) The physiological training and evaluation simulator of Claim 7, wherein the evaluation circuit comprises a resistance sensitive switch.

10. (Original) The physiological training and evaluation simulator of Claim 7, wherein the evaluation circuit comprises a radio sensitive switch.

11. (Previously Presented) The physiological training and evaluation simulator of Claim 2, wherein the evaluation circuit is configured to provide the signal when a manipulation of said portion of the simulated physiological structure including the conductive elastomer causes the evaluation circuit to close.

12. - 13. (Canceled)

14. (Previously Presented) The physiological training and evaluation simulator of Claim 2, wherein the evaluation circuit is incomplete at a gap in the evaluation circuit, and wherein the evaluation circuit is completed when adjacent ends of the evaluation circuit are coupled together to complete the circuit.

15. (Previously Presented) The physiological training and evaluation simulator of Claim 2, wherein the evaluation circuit is configured to provide the signal when a manipulation of said portion of the simulated physiological structure including the conductive elastomer causes the evaluation circuit to open.

16. (Canceled)

17. (Original) The physiological training and evaluation simulator of Claim 2, further comprising a sensor coupled with the evaluation circuit, and the evaluation circuit is configured to provide the signal when wherein the sensor indicates a change in a physical property has been detected.

18. (Previously Presented) The physiological training and evaluation simulator of Claim 17, wherein the sensor is configured to detect a change in temperature.

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19. (Previously Presented) The physiological training and evaluation simulator of Claim 17, wherein the sensor is a chemical sensor.

20. (Original) The physiological training and evaluation simulator of Claim 2, further comprising additional evaluation circuits, each additional evaluation circuit comprising a conductive elastomer, wherein each additional evaluation circuit is configured to provide a signal when a different portion of the simulated physiological structure is manipulated during a procedure performed on the simulated physiological structure.

21. (Previously Presented) The physiological training and evaluation simulator of Claim 2, further comprising an indicator coupled to the evaluation circuit, such that in response to the signal the indicator provides an indication relating to the performance of the simulated procedure.

22. (Original) The physiological training and evaluation simulator of Claim 21, wherein the indicator comprises a light source, light emitted by the light source providing feedback regarding the performance of the procedure.

23. (Original) The physiological training and evaluation simulator of Claim 21, wherein the indicator comprises a meter, a change in the meter providing feedback regarding the performance of the procedure.

24. (Original) The physiological training and evaluation simulator of Claim 2, wherein the simulated physiological structure is a simulated human tissue structure.

25. (Original) The physiological training and evaluation simulator of Claim 24, wherein the simulated human tissue structure comprises:

(a) at least one simulated membranous layer comprising at least one elastomeric layer; and

(b) at least one simulated sub-membranous layer comprising at least one elastomeric layer underlying a first membranous layer.

26. (Original) The physiological training and evaluation simulator of Claim 2, wherein the evaluation circuit is implemented in three dimensions.

27. (Original) The physiological training and evaluation simulator of Claim 26, wherein the evaluation circuit is implemented as a three-dimensional grid.

28. (Original) The physiological training and evaluation simulator of Claim 27, wherein the three-dimensional grid encompasses a majority of the simulated physiological structure.

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29. (Original) The physiological training and evaluation simulator of Claim 2, wherein said simulated physiological structure includes a plurality of integral fluid channels, and wherein the evaluation circuit formed of the conductive elastomer is incorporated into at least some of the integral fluid channels.

30. (Original) The physiological training and evaluation simulator of Claim 29, wherein the evaluation circuit is incorporated into a wall of at least some of the fluid channels, such that the evaluation circuit provides the signal if such a wall is damaged during the simulated procedure.

31. (Original) The physiological training and evaluation simulator of Claim 2, wherein the evaluation circuit couples to a processor configured to manipulate the signal.

32. (Original) The physiological training and evaluation simulator of Claim 31, wherein the simulated physiological structure comprises a physiological control element configured to produce a simulated physiological response in the simulated physiological structure, the physiological control element being coupled to the evaluation circuit so that the processor uses the evaluation circuit to control the physiological control element.

33. (Original) The physiological training and evaluation simulator of Claim 32, wherein the physiological control element comprises at least one of a servo and a pump.

34. (Original) The physiological training and evaluation simulator of Claim 31, wherein the evaluation circuit is implemented with a plurality of branches that extend throughout at least a portion of the simulated physiological structure where the simulated procedure will be performed, so that by monitoring the plurality of branches, the processor determines a three-dimensional location of an instrument during the simulated procedure.

35. (Original) The physiological training and evaluation simulator of Claim 2, wherein the simulated physiological structure comprises a simulated organ.

36. (Original) The physiological training and evaluation simulator of Claim 35, wherein the evaluation circuit comprises a pressure sensor disposed at a periphery of the simulated organ.

37. (Original) The physiological training and evaluation simulator of Claim 2, wherein the evaluation circuit is implemented as a neural network that substantially corresponds to a neural network in a physiological structure upon which the simulated physiological structure is modeled.

38. (Original) The physiological training and evaluation simulator of Claim 2, wherein the simulated physiological structure comprises a simulated joint.

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39. (Original) The physiological training and evaluation simulator of Claim 38, wherein the evaluation circuit is disposed proximate to a location on the simulated joint at which a medical device will be employed in the simulated medical procedure, to evaluate whether a person performed the procedure properly.

40. (Original) The physiological training and evaluation simulator of Claim 2, wherein the simulated physiological structure comprises a simulated bone.

41. (Original) The physiological training and evaluation simulator of Claim 40, wherein the evaluation circuit is disposed at a periphery of the simulated bone, proximate a location on the simulated bone at which a medical device will be employed in the simulated medical procedure, to evaluate whether a person performed the procedure properly.

42. (Canceled)

43. (Original) The physiological training and evaluation simulator of Claim 2, wherein the physiological training and evaluation simulator comprises a surgical trainer, and the simulated physiological structure comprises at least one of a simulated human tissue structure and a simulated organ included in the surgical trainer.

44. (Original) The physiological training and evaluation simulator of Claim 43, wherein the surgical trainer comprises:

(a) at least one simulated structure corresponding to an internal anatomical structure of a human body;

(b) an exterior cover encompassing a substantial portion of the surgical trainer, the exterior cover having at least one predefined opening defining an operative site, so that each opening is disposed adjacent to a different structure, to facilitate access to said structure; and

(c) the simulated human tissue structure is incisable, and is disposed proximate to each predefined opening, such that access to said at least one structure via the adjacent predefined opening requires making an incision in said simulated human tissue structure, an exterior surface of each simulated human tissue structure being substantially flush with respect to an outer surface of the exterior cover, each simulated human tissue structure being removable to be replaced after use, said simulated human tissue structure comprising a plurality of layers, said plurality of layers generally corresponding to layers of tissue found in a human being at a location corresponding to the operative site, and at least one of the plurality of layers including the conductive elastomer.

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45.-54. (Canceled)

55. (Currently Amended) A medical training simulator suitable for medical skills training and evaluation, the medical training simulator comprising a simulated physiological structure and an evaluation circuit including a conductive elastomer, the conductive elastomer exhibiting a self-healing ability with respect to punctures not exhibited by conductive elastomers based on a metal foil combined with an elastomer, said conductive elastomer comprising a first elastomeric layer, a second elastomeric layer, and a conductor encapsulated by the first and second elastomeric layers, at least a segment of the evaluation circuit including the conductive elastomer being configured as a portion of the simulated physiological structure, wherein the evaluation circuit is configured to provide data via an electrical signal originating from the portion of the simulated physiological structure in response to at least one of the following conditions:

(a) a manipulation of the portion of the simulated physiological structure causes the conductive path of the evaluation circuit to be opened;

(b) a sensor coupled to the evaluation circuit detects a change in a non-electrical physical property, wherein the sensor is disposed within the simulated physiological structure; and

(c) an instrument is placed in proximity to at least a portion of the simulated physiological structure, but not in contact with any portion of the evaluation circuit, the instrument not being configured to introduce an electrical current into the evaluation circuit.

56. (Previously Presented) The medical training simulator of Claim 55, wherein the evaluation circuit is distributed throughout the portion of the simulated physiological structure as a three dimensional grid.

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57. (Previously Presented) A method for making a medical training simulator suitable for medical skills training and evaluation, the method comprising the steps of:

(a) determining a physiological structure that the medical training simulator is to simulate;

(b) determining a simulated medical procedure that will be performed on a simulated physiological structure corresponding to the physiological structure; and

(c) constructing a medical training simulator including:

(i) a simulated physiological structure corresponding to the physiological structure of step (a); and

(ii) an evaluation circuit comprising a conductive elastomer, at least some of the conductive elastomer being configured as a portion of the simulated physiological structure, the conductive elastomer exhibiting a self-healing ability with respect to punctures not exhibited by conductive elastomers based on a metal foil combined with an elastomer, the evaluation circuit being configured to provide feedback relating to the simulated medical procedure of step (b), such that the evaluation circuit provides the feedback without the use of an electrically conductive instrument configured to introduce an electrical current into the evaluation circuit in the portion of the simulated physiological structure or provide a conductive path between different segments of the evaluation circuit in the portion of the simulated physiological structure during the simulated medical procedure, the feedback comprising an electrical signal originating from the evaluation circuit in the portion of the simulated physiological structure.

58. (Previously Presented) The method of Claim 57, wherein the step of constructing the medical training simulator comprises the step of incorporating the evaluation circuit proximate to a location on the simulated physiological structure at which the simulated medical procedure is performed, to evaluate if a person performed the simulated medical procedure properly.

59. (Original) The method of Claim 58, wherein the step of applying the evaluation circuit comprises the step of incorporating the evaluation circuit proximate to a periphery of the simulated physiological structure.

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60. (Previously Presented) The method of Claim 57, wherein the step of constructing the medical training simulator comprises the step of configuring the evaluation circuit to provide data in response to at least one of the following conditions:

(a) the portion of the simulated physiological structure is manipulated;

(b) pressure is applied to the portion of the simulated physiological structure;

(c) the portion of the simulated physiological structure is touched;

(d) a manipulation of the portion of the simulated physiological structure causes the evaluation circuit to close;

(e) a manipulation of the portion of the simulated physiological structure causes the evaluation circuit to open;

(f) a sensor coupled to the evaluation circuit detects a change in a physical property; and

(g) an instrument is placed in proximity to the portion of the simulated physiological structure.

61. (Previously Presented) The method of Claim 57, wherein the step of constructing the medical training simulator comprises the step of configuring the evaluation circuit to include an indicator that provides an indication of whether the medical device is properly utilized to perform the simulated medical procedure.

62.-73. (Canceled)

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74. (Currently Amended) A method for using a medical training simulator for medical skills training and evaluation, comprising the steps of:

(a) providing a medical training simulator comprising a simulated physiological structure and a conductive elastomer-based evaluation circuit configured to evaluate a simulated medical procedure, a conductive elastomer in the conductive-elastomer-based evaluation circuit comprising a conductive powder dispersed in an elastomeric matrix;

(b) using the conductive elastomer-based evaluation circuit to monitor a person's performance of the simulated medical procedure; and

(c) enabling a user to selectively direct the evaluation circuit's indication of the performance to at least one member selected from the group of members consisting of:

(i) the user, so that the indication is immediately apparent to the user;

(ii) to another party; and

(iii) to an electronic storage location.

75. (Canceled)

76. (Original) The method of Claim 74, wherein the indication produced by the conductive elastomer-based evaluation circuit is used to provide at least one of a visual and an audible feedback to the person during the execution of the simulated medical procedure.

77. (Original) The method of Claim 74, wherein the indication produced by the conductive elastomer-based evaluation circuit is used to determine a rate of learning.

78. (Original) The method of Claim 74, wherein the indication produced by the conductive elastomer-based evaluation circuit is used to determine a physiological response for the medical training simulator to emulate.

79. -87. (Canceled)

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88. (Previously Presented) A medical training simulator suitable for medical skills training and evaluation, the medical training model comprising a simulated physiological structure and an evaluation circuit including a conductive elastomer, the evaluation circuit including a first conductive segment and a second conductive segment separated by a non conductive segment such that they are not electrically coupled to each other, the first conductive segment and the second conductive segment being part of the simulated physiological structure, said evaluation circuit being configured to provide data related to proper execution of a simulated medical procedure being performed using the simulated physiological structure when the non conductive segment is removed and the first conductive segment and the second conductive segment are coupled together during the simulated medical procedure, thereby completing the evaluation circuit and enabling the evaluation circuit to provide the data related to the proper execution of the simulated medical procedure.

89. (Previously Presented) A medical training simulator suitable for medical skills training and evaluation, the medical training model comprising a simulated physiological structure and an evaluation circuit including a conductive elastomer, the evaluation circuit including a first conductive segment and a second conductive segment are separated by a gap, such that they are not electrically coupled to each other, the first conductive segment and the second conductive segment being part of the simulated physiological structure, said evaluation circuit being configured to provide data related to proper execution of a simulated medical procedure being performed using the simulated physiological structure when either the first conductive segment or the second conductive segment are repositioned and placed in contact with either the other of the first conductive segment or the other of the second conductive segment during the simulated medical procedure, thereby completing the evaluation circuit and enabling the evaluation circuit to provide the data related to the proper execution of the simulated medical procedure.

90. – 96. (Canceled)

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97. (Previously Presented) A physiological training and evaluation simulator suitable for training and testing personnel, comprising:

(a) a simulated physiological structure; and

(b) an evaluation circuit including a conductive elastomer, at least a portion of the evaluation circuit including the conductive elastomer being disposed within the simulated physiological structure, the conductive elastomer enhancing a realism of the simulated physiological structure, the portion of the evaluation circuit in the simulated physiological structure including a gap separating a first conductive segment from a second conductive segment, such that proper execution of a simulated medical procedure causes the gap between the first and second conductive segments to be eliminated without applying pressure to an external surface of the simulated physiological structure, thereby producing an indication that the simulated medical procedure has been properly performed.

98. (Previously Presented) A physiological training and evaluation simulator suitable for training and testing personnel, comprising:

(a) a simulated physiological structure;

(b) an evaluation circuit including a conductive elastomer, the conductive elastomer comprising a conductive powder dispersed in an elastomeric matrix, at least a portion of the evaluation circuit including the conductive elastomer being disposed within the simulated physiological structure, the conductive elastomer enhancing a realism of the simulated physiological structure, the evaluation circuit producing an indication of the performance of a simulated medical procedure; and

(c) a switch that in a first position provides the indication to the trainee during the simulated medical procedure, and in a second position provides the indication to at least one of a proctor and a storage medium, such that in the second position the trainee does not receive the indication during the simulated medical procedure.

99. – 100. (Canceled)

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